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Patents Office  
45 Merrion Square  
Dublin 2

PRIORITY DOCUMENT

I HEREBY CERTIFY that annexed hereto is a true copy of documents filed in connection with the following patent application:

Application No. S950055

Date of filing 25 January, 1995

Applicants GAYA LIMITED, a Company organised under the laws of the Republic of Ireland of 43 Fitzwilliam Place, Dublin 2, Republic of Ireland.

Dated this 28<sup>th</sup> day of February, 1995

V. Cunningham

An officer authorised by the  
Controller of Patents, Designs and Trade Marks.

Request for the Grant of a Patent

8950055

PATENTS ACT, 1992

The Applicant(s) named herein hereby request(s)

the grant of a patent under Part II of the Act  
 the grant of a short-term patent under Part III of the Act

on the basis of the information furnished hereunder

1. Applicant(s)

Name **GAYA LIMITED**

Address **43, Fitzwilliam Place, Dublin 2, Republic of Ireland.**

Description/Residence: **A company organised under the laws  
of the Republic of Ireland.**

2. Title of Invention **IMPROVEMENTS IN AND RELATING TO SURGICAL  
INSTRUMENTS**

3. Declaration of Priority on basis of previously filed application(s) for same  
invention (Sections 25 & 26)

Previous filing date Country in or for which filed Filing No.

4. Identification of Inventor(s)

Name(s) of person(s) believed by Applicant(s) to be the inventor(s)

Address

3970055

5. Statement of right to be granted a patent (Section 17(2) (b))

6. Items accompanying this Request - tick as appropriate

- (i)  prescribed filing fee (£ 55.00 )
- (ii)  specification containing a description and claims
- specification containing a description only
- drawings referred to in description or claims
- (iii)  An abstract
- (iv)  Copy of previous application(s) whose priority is claimed
- (v)  Translation of previous application whose priority is claimed
- (vi)  Authorisation of Agent (this may be given at 8 below if this Request is signed by the Applicant(s))

7. Divisional Application(s)

The following information is applicable to the present application which is made under Section 24.

Earlier Application No: Filing Date:

8. Agent

The following is authorised to act as agent in all proceedings connected with the obtaining of a patent to which this request relates and in relation to any patent granted -

MACLACHLAN & DONALDSON, 47 Merrion Square, Dublin 2

9. Address for Service (if different from that at 8)

MACLACHLAN & DONALDSON, at their address as recorded for the time being in the Register of Patent Agents (Rule 92)

Signed Name(s): GAYA LIMITED

By:

*Denis Mc Catty*

MACLACHLAN & DONALDSON, Applicants Agents

Capacity (if applicant is a body corporate):

January 25 1995

Date

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IMPROVEMENTS IN AND RELATING TO SURGICAL INSTRUMENTS

The present invention concerns improvements in and relating to surgical instruments.

When surgery is being performed, the surgeon generally 5 relies on a trocar and trocar sleeve to give access to the abdominal cavity while maintaining pneumoperitoneum. The trocar must be sharp to cut through and separate the muscle and facia surrounding the abdominal cavity. The trocar sleeve allows entry and exit of instruments 10 therethrough while sealing the pneumoperitoneum. A valve is included at the entry of the trocar sleeve which opens to allow a surgical instrument such as a dissecting scissors, a stapling instrument, forceps and such like to pass through the valve and be moved through the trocar 15 sleeve into the abdominal cavity where the instruments are manipulated by the surgeon. The valve closes when the instrument is withdrawn.

Clearly, the dimensions of the surgical instruments must 20 be sized so that those instruments can fit through the trocar sleeve.

Known devices suffer from the disadvantage that when the surgeon wishes to use a different instrument which is larger than the internal diameter of the trocar, he must make an incision in the patient to gain access to the 25 tissue or organ or remove the tissue or portion of say the bowel through the incision to work on it. Such an incision will lose the pneumoperitoneum.

The present invention seeks to alleviate the disadvantages of the prior art.

The present invention accordingly provides a surgical instrument comprising an elongate shaft, the dimensions of which are appropriately sized so as to enable the shaft to be inserted and retracted through a trocar sleeve, a  
5 detachable instrumentation head and means for detachably connecting the instrumentation head to the shaft whereby the shaft can be moved through the trocar sleeve without the instrumentation head being connected thereto and the instrumentation head can be detachably connected to the  
10 shaft within abdominal cavity of a patient.

Advantageously, the detachable head does not need to be of a size necessary to enable it to pass through the trocar sleeve. The detachable instrumentation head can be carried into the abdominal cavity in the surgeon's hand.  
15 This is envisaged both in the situation where the surgery is being carried out by minimally invasive surgery and where surgery is by open surgery. In the case of minimally invasive surgery, devices are described in applicants' co-pending applications which enable a  
20 surgeon's hand to enter the abdominal cavity for surgery. The detachable instrumentation head can be carried into the abdominal cavity in the surgeon's hand.

In use, the surgeon can attach the instrumentation head to the shaft inside the abdominal cavity. This has the  
25 advantage that the instrument does not have to be withdrawn from the abdominal cavity via the trocar sleeve and a different instrument inserted.

The invention will now be described more particularly with reference to the accompanying drawings in which are  
30 shown, by way of example only, one example of a surgical instrument according to the present invention.

In the drawings:

Figure 1 is a side view of the surgical instrument with the detachable instrumentation head shown in a detached position in which it is separated from the shaft of the surgical instrument; and

Figure 2 is a side view of a trocar sleeve.

Referring to the drawings, the surgical instrument of the present invention is indicated generally by reference numeral 1 and includes a handle 2 provided with a trigger 3 which is pivotally connected to the handle 2. The instrument 1 also includes an elongate shaft 4 and a detachable instrumentation head 5. The shaft 4 and instrumentation head are detachably connectable together by attachment means 6. As shown in the drawings, the instrumentation head 5 is provided with a stapling device. Obviously, any particular alternative surgical instrument such as a forceps, for instance, may be provided on the instrumentation head 5.

In use, the shaft 4 of the surgical instrument 1 is inserted into the valve (not shown) on the trocar sleeve which is indicated generally by reference numeral 10 on Figure 2. The shaft 4 is pushed through the barrel 11 of the trocar sleeve 10 which is of approximately from 3mm to 6mm internal diameter. In the prior art, the internal diameter of the trocar barrel 11 and the shaft 4 is typically up to 15mm in diameter so as to accommodate an instrumentation head of that size.

In use, the detachable instrumentation head 5 is held in the hand of the surgeon and the appropriate instrumentation head 5 provided with the required

instrument is connected to the shaft 4 by the attachment means 6. The trigger 3 is operated by the surgeon so as to control and manipulate the stapling device provided on the dataachable instrumentation head 5.

5 It is to be understood that the attachment means 6 is variable as are the dimensions of the instrumentation head 5 since the latter is not restricted by the dimensions of the trocar sleeve 11.

10 It will of course be understood that the invention is not limited to the specific details described herein, which are given by way of example only, and that various modifications and alterations are possible within the scope of the invention.

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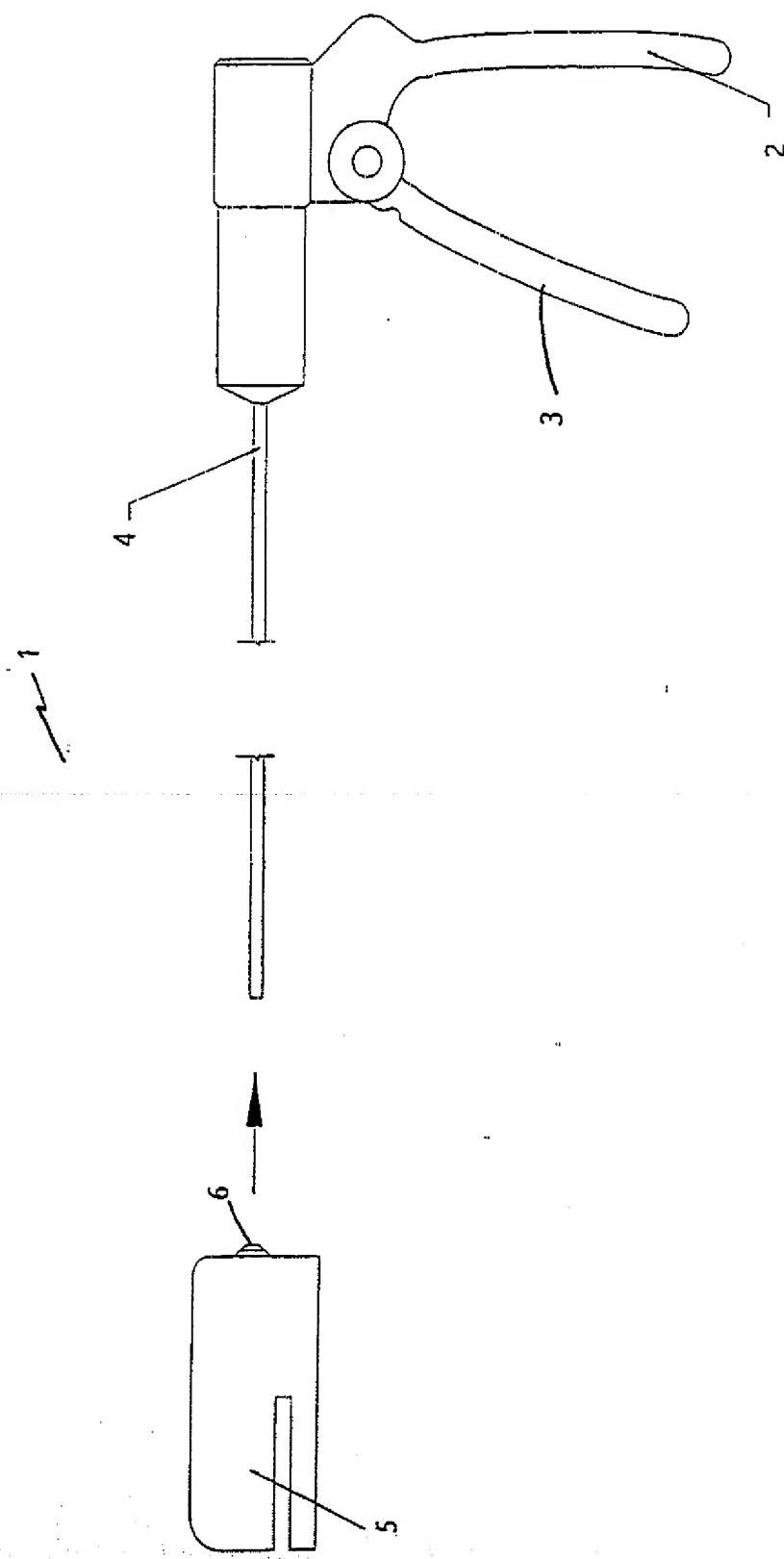


FIGURE 1

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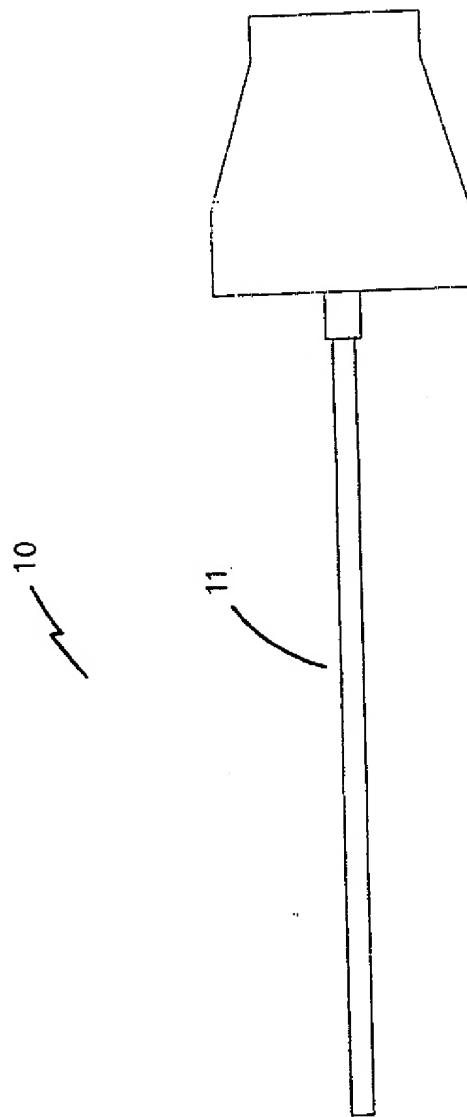


FIGURE 2

